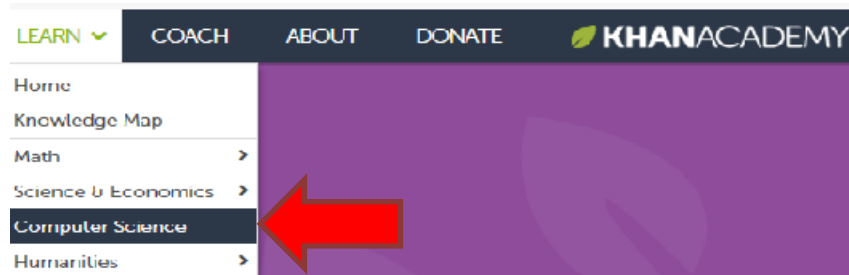


Khan Academy Programming Mini-Course

I'll help you sign up under me as your coach on Khan Academy in class. Go to the Computer Programming section of Khan Academy. Watch the videos and do the Challenges. When you are ready, tackle the projects. They are your SIGNPOST assignments for this section of the course.



Section A: INTRODUCTORY VIDEOS

1. What is Programming? (2:23)
2. Sneak Peek: Making an Awesome Program (7:40)
3. A Tour of Programming on Khan Academy (6:15)

Section B: DRAWING BASICS

4. Intro to Drawing (6:23)
5. Challenge: H for Hopper
6. More Drawing! (5:16)
7. Challenge: Simple Shapes!
8. Challenge: CRAZY Face
9. Intro to Coloring (4:27)
10. Challenge: Ice Cream Code
11. Challenge: It's a Beautiful Day
- 12. Project: What's for Dinner?**

Section C: VARIABLES

13. Intro to Variables (3:52)
14. Challenge: Bucktooth Bunny
15. More on Variables (7:09)
16. Challenge: Funky Frog
17. Variable Expressions (7:27)
18. Challenge: Mickey Mouse Ears
- 19. Project: Design an Animal**
- 20. Project: Custom Clothing**

Section D: ANIMATION BASICS

21. Intro to Animation (5:10)
22. Challenge: Exploding Sun

- 23. Mouse Interaction (2:18)
- 24. Challenge: Tasty Tomato
- 25. Project: Crazy Painter**
- 26. Incrementing Shortcuts (2:19)
- 27. Challenge: Parting Clouds
- 28. Using Math Expressions (2:55)

29. Project: Public Transportation

Section E: TEXT

- 30. Terrific Text: Part One (4:17)
- 31. Challenge: My Favorite Foods
- 32. Terrific Text: Part Two (3:48)
- 33. Challenge: Mouse Tracker
- 34. Project: Ad Design**

Section F: FUNCTIONS

- 35. Functions (4:47)
- 36. Challenge: Say Your Name
- 37. Function Parameters (4:55)
- 38. Challenge: Moles in Holes
- 39. Function Return Values (4:23)
- 40. Challenge: Calculator
- 41. Magic Functions (3:55)
- 42. Local and Global Variables (4:57)

Section G: LOGIC AND IF STATEMENTS

- 43. If Statements (4:21)
- 44. Challenge: Bouncy Ball
- 45. More Mouse Interaction (4:28)
- 46. Challenge: Your First Painting App
- 47. Booleans (6:25)
- 48. Challenge: Number Analyzer
- 49. Logical Operators (4:24)
- 50. Challenge: Your First Button
- 51. Challenge: Smarter Button
- 52. If/Else-Part 1 (4:44)
- 53. Challenge: Flashy Flash Card
- 54. If/Else Part 2 (5:52)
- 55. Project: Magic 8-Ball**

Section H: LOOPING

- 56. Intro to While Loops (4:46)
- 57. Challenge: A Loopy Ruler

Section I: ARRAYS

- 58. Intro to Arrays (5:00)
- 59. Challenge: Favorite Fruits
- 60. Looping through Arrays (5:12)
- 61. Challenge: Favorite Animals
- 62. Modifying Arrays (5:40)

Section J: OBJECTS

- 63. Intro to Objects (5:16)
- 64. Modifying Objects (4:54)
- 65. Arrays of Objects (6:01)

Section K: BECOMING A BETTER PROGRAMMER

- 66. The Power of the Docs (6:10)
- 67. Pseudo-Code (3:26)
- 68. Clarifying with Comments (5:34)
- 69. Readable Code (3:59)
- 70. What to Learn Next (ReadMe!)

If you are interested in learning more programming, you could always choose to learn a new language or new functions as one of your Optional Goals

There is about a total of 3 hours of video (three classes, if you watch it straight through). The challenges take less than a minute each to complete. Projects will take a few minutes apiece.

The signpost assignments (projects) must be completed by **January 21, 2014**. You will have only a couple of weeks after that to finish your Required Goal 3 (below), so be sure that you plan your time accordingly! Feel free to start your Required Goal as soon as you feel ready.

Your Required Goal 3 assignment:

Use the Program Creator from the front page of the programming section to create your own short video game. It doesn't have to be fancy—but it has to include rules, a way to win (or lose), things that move on the screen, color, and as many of the different kinds of commands as you can think to use. Mark your own Required Goal 3 on the attached rubric, then complete the reflection piece and post your game (using the “share” feature on KhanAcademy) and reflection in your e-portfolio.

Required Goal 3 (your video game) is due on **February 11, 2014**.